

Poppy seed

A kingdom far, far away is ruled by a king who has a beautiful daughter. Many knights would like to marry her, but the wise father has to test their abilities first. His court shaman has invented a puzzle, which he puts before each candidate for the princess' hand in marriage. Here it is:

- There are N bins arranged in a circle,
- Every bin is filled with some number of poppy seeds,
- The shaman divided the poppy seeds from the first bin into N equal parts, threw one part into bin number two, and the rest back into the first bin.
- He then divided the poppy seeds from the second bin into N equal parts, threw one part into bin number three, and the rest back into the second bin.
- He repeated the procedure for every other bin.
- Eventually he divided the poppy seeds from the N -th bin into N equal parts, and threw one part into bin number one and the rest back into the N -th bin.
- After all this it turned out there were exactly A seeds in every bin.

The shaman now asks the knight if this is possible?

One knight is deeply in love with the princess and hence asks you for help with the riddle.

Input

Standard input contains K ($1 \leq K \leq 10\,000$) lines, each containing two values N, A ($4 \leq N \leq 30\,000$, $200 \leq A \leq 10^{200}$) separated by spaces. In line $K+1$ there are two zeros separated by spaces. Do not process this test case.

Output

Write K lines of output. In each line, print the word 'Yes', if the situation described by the shaman possible for the data in the corresponding line of input or the word 'No' in the opposite case.

Example

Input:

5 32

4 17

0 0

Output:

Yes

No

Scoring

By solving this problem you will score **10** points.